HomeConnect™ Cable Modem External with USB Getting Started Guide

http://www.3com.com/

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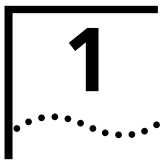

BEFORE YOU BEGIN

Introduction

You have just purchased a modem featuring a pioneering new technology, making Internet access possible at speeds previously only imagined. This external cable modem is one part of a comprehensive communications system that utilizes the cable television network to deliver high-speed data to your computer. Data is requested and sent over the cable television network at burst rates of up to 38 megabits per second (Mbps)*. This chapter explains how to prepare your computer system for cable modem installation.

** Actual speeds will vary depending on computer hardware, applications, service offered by your cable service provider, and network traffic.*

Cable Modem Features

- Cable line bandwidth allows user data rates of up to 38 megabits per second (Mbps)*, faster than 56K analog modems, ISDN, or ADSL.
- Two-way design means that the cable modem both sends and receives data over the cable line.
- Plug-and-play USB operation ensures easy setup and installation.
- DOCSIS-compliance ensures interoperability with cable suppliers.
- 3Com's extensive technical support organization provides you with the quick answers you need to get up and running.

** NOTE: Please note that the following factors affect the speeds you may experience: (1) your computer equipment and configuration, including the speed of your processor, the amount of RAM on your system, and your available*

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hard disk space; (2) applications running simultaneously with the modem which use varying amounts of your computer's resources; (3) the capacity of the Internet service you order from your provider; (4) the level of network traffic, which varies depending on when and where you go online.

Contacting Your Local Cable Service Provider

In order to use your cable modem, you need to set up an Internet access account with your local cable service provider.

Before contacting your provider to set up an account, have the following information handy:

- The modem's serial number. The serial number appears on the white bar code label on the back of the modem and consists of 10 characters preceded by the text "SN=". In the following example label image, the serial number is 6LZ1377410.
- Media Access Control (MAC) address. The MAC address appears on the white bar code label on the back of the modem and consists of 12 characters preceded by the text "EA =". In the following example label image, the MAC address is 00104B377410. Write both of these numbers in the following blanks for future reference.

Serial number: SN= _____
MAC address: EA = _____

You should now contact your local cable service provider and verify that:

- **The cable service to your home supports two-way cable modem access**. If your cable service provider does not provide two-way service, this modem will not

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be able to communicate with your cable service provider's Internet access service. You should immediately consult your cable service provider and place of purchase to determine the proper 3Com® cable modem to use. You can also visit the following URL for additional information:

http://www.3com.com/cablemodem

- **You have a cable line near your PC and it has been prepared for cable modem service**. If you do not have a cable line in your home that supports two-way cable modem access, or if your current cable connection is not conveniently located near your computer, your cable service provider can install one. If you use your current cable line for cable television access, your cable service provider can also install an additional line for use with your cable modem.
- **Your cable service provider has set up your cable Internet access account**. Your cable service provider will set up an Internet access account that will allow you to send and receive e-mail, access the World Wide Web, and receive other Internet services. This account must be set up before you can use your cable modem.

Preparing Your Workspace

- Position your computer so that it is located near the wall cable outlet.
- Position the cable modem so that it is located near the computer and the wall cable outlet. There should be plenty of room to guide the cables away from the modem without crimping them.
- Do not restrict the airflow around the modem.
- Ensure that the temperature in the room where the cable modem will be operating is between 0 and 40°C (32 and 104°F). Relative humidity should be between 5% and 90%, non-condensing.
- Familiarize yourself with all of the materials supplied with the modem. Please read these installation instructions thoroughly before installing the modem.

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***CAUTION**: Your cable service provider will provide a cable connection. Do not attempt any rewiring without first contacting your cable service provider.*

You Will Need These Items

Supplied

- Cable modem
- Cable modem power adapter
- Ethernet cable
- USB cable
- This *Getting Started Guide*
- The Cable *Connections*™ CD, which contains:
  - The software drivers necessary for installation using the USB port
  - Valuable free software products

  See "Using the Cable *Connections* CD" for more information.

Also Needed

- To use the cable modem's *USB* port:
  - A PC running Windows 98 or Windows 2000 operating system. Currently, USB does not support the Macintosh operating system.
  - An active USB port on your computer.
- To use the cable modem's *Ethernet* port:
  - A PC running Windows 95 (or later), or a Macintosh computer running System 7.5 (or later).
  - An active Ethernet port on your computer.
  - TCP/IP protocol installed. See the following chapter for more information on installing the TCP/IP protocol.
- Windows 95/98/2000 CD or diskettes.
- An active two-way cable line.
- An adjustable wrench for securing the cable line to the modem.

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2 USB INSTALLATION

Deciding Which Installation Process to Use

The 3Com® HomeConnect™ cable modem allows you to connect to the Internet using either the USB port or the Ethernet port. Be sure to follow the instructions provided for the port that you want to use.

Using the USB port to connect to the Internet allows you to install the cable modem more quickly and easily than connecting to the Internet using the Ethernet port, because you do not need to install a network interface card (NIC). USB, however, only allows you to connect one computer to the cable modem.

Using the Ethernet port allows you to use a hub to connect multiple computers to the cable modem. To do this, you may need to obtain additional IP addresses from your cable service provider.

CAUTION: *You cannot use the USB and Ethernet connections simultaneously. Therefore, you should not have the USB cable and the Ethernet cable plugged into the cable modem at the same time. Having the USB and Ethernet cables plugged into the cable modem at the same time might prevent you from accessing the Internet.*

See Chapter 3 "Ethernet Installation" to set up the Ethernet connection.

Using USB with the Windows 98 Operating System

To use the USB port with Windows 98:

1. Power on the computer.
2. Use the illustration on page 23 as a guide to make the following connections:
   a. Connect the cable line to the cable modem's CATV cable connector. Be careful not to bend the wire in the

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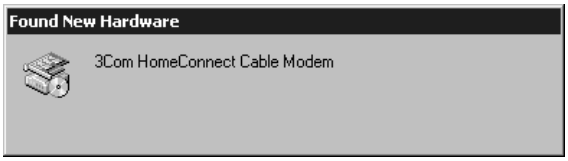
center of the cable line when you connect it to the cable modem. After hand-tightening the CATV cable connector, use the adjustable wrench to firmly tighten it. Be careful not to over-tighten the connector or you may damage either the connector or the cable modem. If you plan to have the cable line connected to a television as well as the cable modem, you will need a cable line splitter (not included).

b Connect the USB cable line to the cable modem's USB port and to the USB port on the computer.

c Plug the cable modem's power adapter into a wall outlet or surge protector and into the cable modem's power jack.



Windows detects the cable modem. The Found New Hardware screen appears.

3 When the Add New Hardware Wizard screen appears, insert the Cable *Connections* CD into the computer's CD-ROM drive.

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Add New Hardware Wizard
This wizard searches for new drivers for:
USB Composite Device
A device driver is a software program that makes a hardware device work.
< Back
Next >
Cancel

4 Click *Next*.

Add New Hardware Wizard
What do you want Windows to do?
Search for the best driver for your device. (Recommended).
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

5 Select *Search for the best driver for your device. (Recommended)* and click *Next*.

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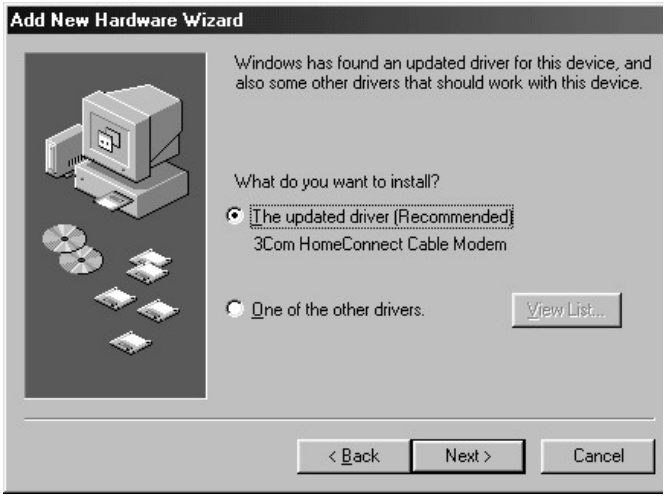
Add New Hardware Wizard
Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
A:\
Browse...
< Back
Next >
Cancel

6 Check the *CD-ROM drive* check box and click *Next* to search for the necessary driver files.


Add New Hardware Wizard
Windows has found an updated driver for this device, and also some other drivers that should work with this device.
What do you want to install?
The updated driver (Recommended)
3Com HomeConnect Cable Modem
One of the other drivers.
View List...
< Back
Next >
Cancel

7 If Windows finds an updated driver, select *The updated driver (Recommended) 3Com HomeConnect Cable Modem* and click *Next*.

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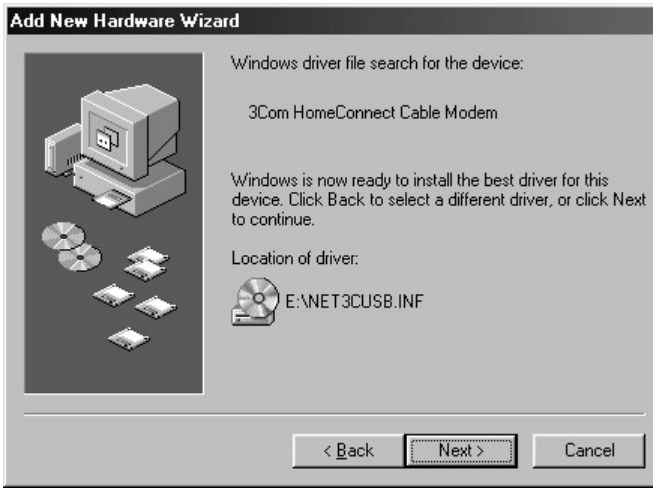
Add New Hardware Wizard
Windows driver file search for the device:
3Com HomeConnect Cable Modem
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
E:\NET3CUSB.INF
< Back
Next >
Cancel

8 Click *Next*. The computer automatically copies the necessary driver files from the CD.

The computer finishes copying the driver files and prompts you to insert the Windows 98 CD into the CD-ROM drive.

9 Insert the Windows 98 CD and click *OK*. If the Copying Files dialog box appears, make sure that you have inserted the correct CD and that you have pointed it to the correct path. In the following example, the path is E:\win98, where E represents the CD-ROM drive. If necessary, replace the E with the letter of your CD-ROM drive. After you point the Add New Hardware Wizard to the correct path, click *OK*.

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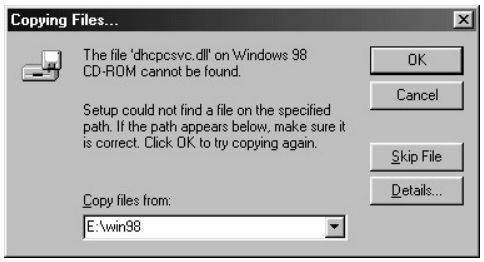
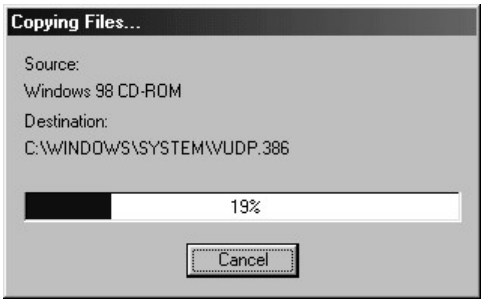

Copying Files...
The file 'dhcpcsvc.dll' on Windows 98 CD-ROM cannot be found.
Setup could not find a file on the specified path. If the path appears below, make sure it is correct. Click OK to try copying again.
Copy files from:
E:\win98
OK
Cancel
Skip File
Details...

The computer automatically copies the necessary system files.



10 Click *Finish* after the computer has copied the necessary files.

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Add New Hardware Wizard
3Com HomeConnect Cable Modem
Windows has finished installing the software that your new hardware device requires.
< Back
Finish
Cancel

The System Settings Change dialog box opens.

System Settings Change
To finish setting up your new hardware, you must restart your computer.
Do you want to restart your computer now?
Yes
No

11 Click *Yes* to restart the computer.

12 Verify that the cable modem is operating properly. When the modem is operating properly, the cable modem *Link Status* and *Power* LEDs are lighted a solid green.

If you are powering up the cable modem for the first time, allow 15 minutes for this process to finish. See "Cable

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Modem Operation" for a more in-depth description of the front panel LED indicators.

Using the Cable *Connections*™ CD

The included Cable *Connections* CD contains the software drivers necessary for installation using the USB port and valuable free software products.

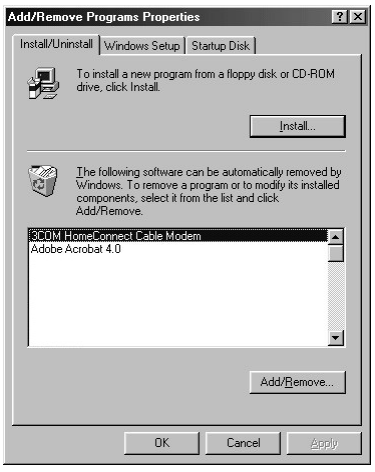
After you have completed the entire USB installation process for the cable modem, you can install the Cable *Connections* CD. Installing the Cable *Connections* CD gives you access to the free software products.

To install the Cable *Connections* CD, follow the instructions on the CD.

Uninstalling the Cable Modem (Windows 98 Operating System Only)

To uninstall the cable modem:

1. Close all open applications.
2. Click Windows *Start* and select *Settings*.
3. Click *Control Panel*.
4. Double-click *Add/Remove Programs*.


Add/Remove Programs Properties
Install/Uninstall
Windows Setup
Startup Disk
To install a new program from a floppy disk or CD-ROM drive, click Install.
Install...
The following software can be automatically removed by Windows. To remove a program or to modify its installed components, select it from the list and click Add/Remove.
3COM HomeConnect Cable Modem
Adobe Acrobat 4.0
Add/Remove...
OK
Cancel
Apply

5. Select *3Com HomeConnect Cable Modem*. Make sure you have selected the software you want to delete. If you

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accidentally select the wrong software and click *Add/Remove*, the Windows deletes the software and you will have to re-install it.

6 Click *Add/Remove*. The system removes the 3Com HomeConnect Cable Modem software.

7 The system prompts you to restart the computer. Click *Yes*.

8 Click Windows *Start*, then click *Shut Down*.

9 Select *Restart the Computer* and click *Yes* to restart the computer.

Using USB with the Windows 2000 Operating System

To use the USB port with Windows 2000:

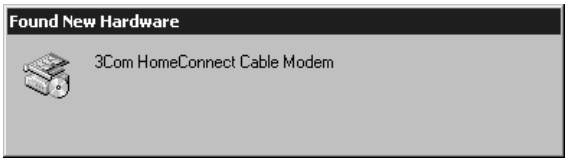
1 Power on the computer.

2 Use the illustration on page 23 as a guide to make the following connections:

a Connect the cable line to the cable modem's CATV cable connector. Be careful not to bend the wire in the center of the cable line when you connect it to the cable modem. After hand-tightening the CATV cable connector, use the adjustable wrench to firmly tighten it. Be careful not to over-tighten the connector or you may damage either the connector or the cable modem. If you plan to have the cable line connected to a television as well as the cable modem, you will need a cable line splitter (not included).

b Connect the USB cable line to the cable modem's USB port and to the computer's USB port.

c Plug the cable modem's power adapter into a wall outlet or surge protector and into the cable modem's power jack. The Found New Hardware screen appears.



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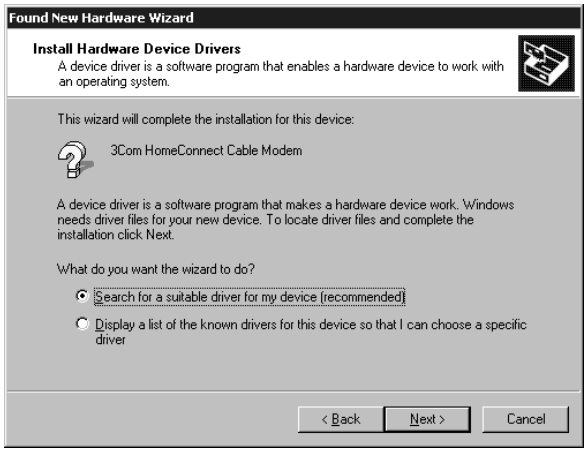
Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel

3 The Found New Hardware Wizard screen appears. Insert the included Cable *Connections* CD into the CD-ROM drive and Click *Next*.


Found New Hardware Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
3Com HomeConnect Cable Modem
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< Back
Next >
Cancel

4 Select *Search for a suitable driver for my device (recommended)* and click *Next*.

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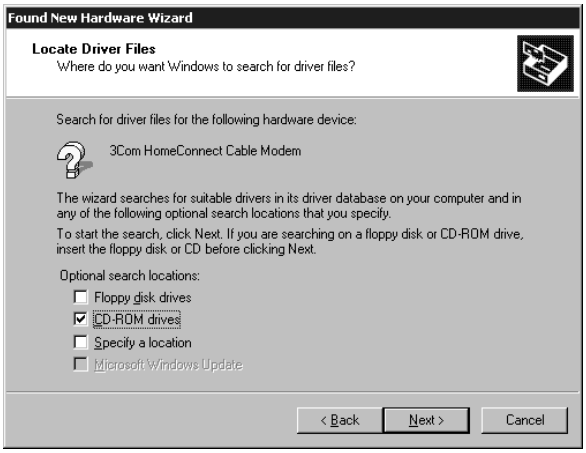
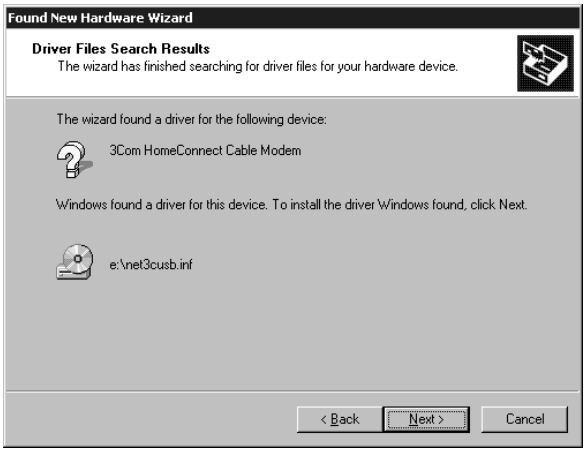

Found New Hardware Wizard
Locate Driver Files
Where do you want Windows to search for driver files?
Search for driver files for the following hardware device:
3Com HomeConnect Cable Modem
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
Optional search locations:
Floppy disk drives
CD-ROM drives
Specify a location
Microsoft Windows Update
< Back
Next >
Cancel

5 Check the *CD-ROM drives* check box and click *Next* to search for the necessary driver files.


Found New Hardware Wizard
Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
3Com HomeConnect Cable Modem
Windows found a driver for this device. To install the driver Windows found, click Next.
e:\net3cusb.inf
< Back
Next >
Cancel

6 The Found New Hardware Wizard displays the search results. Click *Next* to install the driver files for the cable modem.

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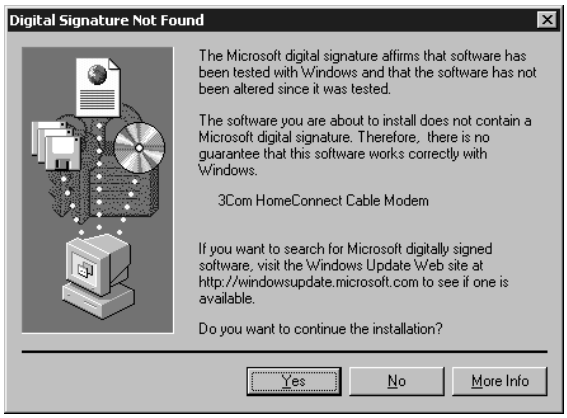
Digital Signature Not Found
The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
3Com HomeConnect Cable Modem
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info

7 The Digital Signature Not Found screen appears. Click *Yes* to continue the driver installation.

Found New Hardware Wizard
Completing the Found New Hardware Wizard
3Com HomeConnect Cable Modem
Windows has finished installing the software for this device.
To close this wizard, click Finish.
< Back
Finish
Cancel

8 The Found New Hardware Wizard completes the driver installation. Click *Finish* to close the Found New Hardware Wizard.

9 Verify that the cable modem is operating properly. When the modem is operating properly, the cable modem *Link Status* and *Power* LEDs are lighted solid green.

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If you are powering up the cable modem for the first time, allow 15 minutes for this process to finish. See "Cable Modem Operation" for a more in-depth description of the front panel LED indicators.

Uninstalling the Cable Modem (Windows 2000 Operating System Only)

To uninstall the cable modem while using Windows 2000:

1. Close all open applications.
2. Click Windows *Start*.
3. Select *Settings*.
4. Click *Control Panel*.
5. Double-click *Add/Remove Programs*. The Add/Remove Hardware Wizard screen appears.
6. Click *Next*.
7. Select *Uninstall/Unplug a device* and click *Next*.
8. Select *Uninstall a device. Choose this option to permanently uninstall a device and its driver.*
9. Click *Next*.
10. Select *3Com HomeConnect Cable Modem* and click *Next.*

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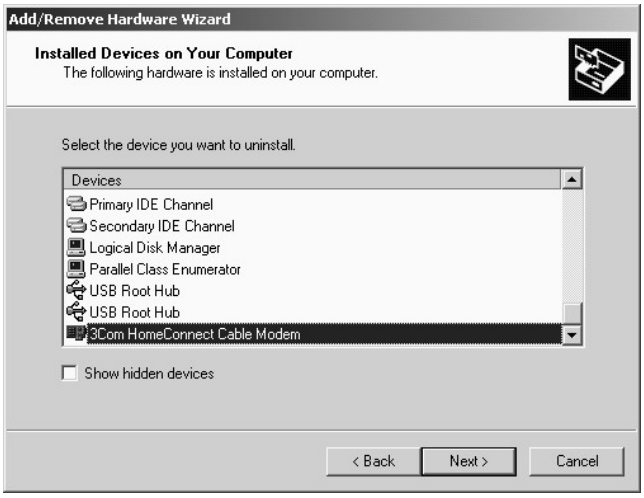

11 Verify that you have selected *3Com HomeConnect Cable Modem* then select *Yes, I want to uninstall this device.*

12 Click *Next*.

13 Click *Finish* when Windows informs you that it has successfully uninstalled the selected device.

Troubleshooting the USB Installation

I cannot access my e-mail or Internet service.

- Check all connections. Make sure the cable line is securely connected to the cable jack on the back of the modem. Verify that the USB cable is securely plugged into both the modem and the computer. Make sure the power adapter is properly plugged into both the modem and a wall outlet or surge protector. If the cable modem is properly connected, the Cable Modem Power and Link Status indicator lights on the front of the modem should all be a solid color.
- Power cycle the cable modem by unplugging the power jack from its electrical outlet and then plugging it back into the outlet. Then try reconnecting to your cable service provider.

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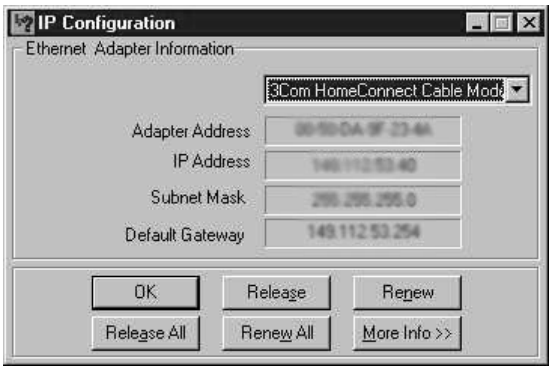
- Power off the computer. Power cycle the computer by unplugging the computer from its electrical outlet and then plugging it back into the outlet. Then try reconnecting to your cable service provider.
- Call your cable service provider to verify that their service is two-way. This modem is designed for use with two-way cable plants.
- If you are using a cable line splitter so that you can connect the cable modem and a television at the same time, try removing the splitter and reconnecting the cables so that the cable modem is connected directly to the cable wall jack. Then try reconnecting to your cable service provider.
- If you use the Windows 98 operating system, verify that you have fewer than five TCP/IP bindings. Click Windows *Start*, select *Settings*, and click *Control Panel*. Double-click *Network* and count the number of TCP/IP bindings listed. You cannot have more than five TCP/IP bindings for the cable modem to operate. You must remove enough TCP/IP bindings so that you have no more than five TCP/IP bindings. After you remove the extra bindings, uninstall the cable modem. Reboot the computer and re-install the cable modem, following the instructions in this guide.
- Release and renew the computer's IP address.

  To release and renew the IP address for the Windows 95/98 operating system:

a Click Windows *Start* and click *Run*.

b Type **`winipcfg`** in the Open field and click *OK*. The IP Configuration screen appears.

Downloaded from www.Manualslib.com manuals search engine



c In the Ethernet Adapter Information group area, click the drop down arrow and select *3Com HomeConnect Cable Modem.*

d Click *Release*. The IP address changes to *0.0.0.0.*

e Click *Renew* to refresh the IP address. The refreshed address may or may not be the same as the original IP address.

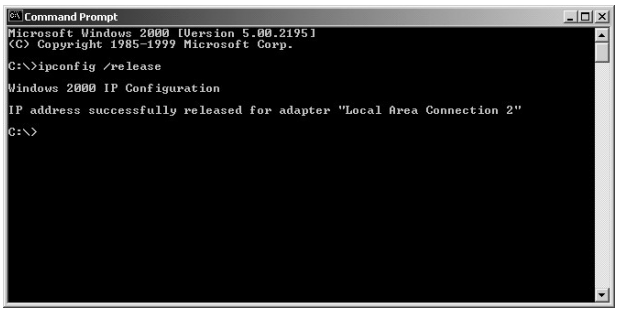
To release and renew the IP address for the Windows 2000 operating system:

a Click Windows *Start* and select *Programs,* then *Accessories*.

b Click *Command Prompt*.

c At the command prompt (C:\), type **`ipconfig /release`** and press the *Enter* key (notice that there is a space between *ipconfig* and */release*).

Downloaded from www.Manualslib.com manuals search engine


Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.
C:\>ipconfig /release
Windows 2000 IP Configuration
IP address successfully released for adapter "Local Area Connection 2"
C:\>

d After the system releases the IP address, at the command prompt type **`ipconfig /renew`** and press the *Enter* key (notice that there is a space between *ipconfig* and */renew*).

Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.
C:\>ipconfig /release
Windows 2000 IP Configuration
IP address successfully released for adapter "Local Area Connection 2"
C:\>ipconfig /renew
Windows 2000 IP Configuration
Ethernet adapter Local Area Connection 2:
Connection-specific DNS Suffix . :
IP Address. . . . . :
Subnet Mask . . . . . :
Default Gateway . . . . . :
C:\>

e Exit the Command Prompt screen to return to the Windows desktop.

The Cable Status LED never stops blinking.

The signal from your cable service provider's equipment may be too weak or the cable line may not be properly attached to the modem. If the cable line is properly connected to the modem, call your cable service provider to verify whether a weak signal is the problem.

All four of the LEDs on the front of my cable modem are lighted and blinking.

Call your cable service provider or 3Com's technical support for assistance.

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All of the LEDs on the front of my modem look right, but I still cannot access the Internet.

- If the Power, Link Status LEDs, and Data Rate LEDs are lighted, the cable modem is operating properly. Try shutting down the computer and then turning it back on. This will cause the computer to re-establish communications with your cable service provider's computer.
- Power cycle the cable modem by removing the power adapter from its outlet and then plugging it back into the outlet. Then try reconnecting to your cable service provider.
- You may not have installed TCP/IP properly (for Windows 95 and 98SE: *winipcfg*; for Windows 2000: *ipconfig*), or the TCP/IP parameters provided by your cable service provider may not be correct for your computer.
- If you are using a cable line splitter so that you can connect the cable modem and a television at the same time, try removing the splitter and reconnecting the cables so that the cable modem is connected directly to the cable wall jack. Then try reconnecting to your cable service provider.

The power on my modem goes on and off sporadically. The Link Status light never stops blinking.

You may be using the wrong power adapter. Check that the power adapter you are using is the one that came with the cable modem.

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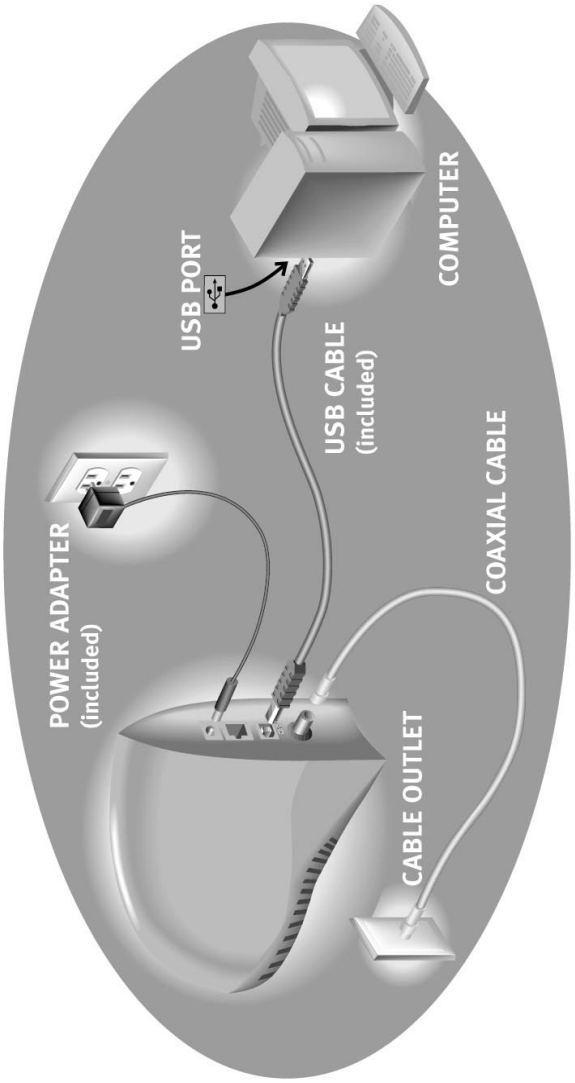

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3 ETHERNET INSTALLATION

Deciding Which Installation Process to Use

The 3Com® HomeConnect™ cable modem allows you to connect to the Internet using either the USB port or the Ethernet port. Be sure to follow the instructions provided for the port that you want to use.

Using the USB port to connect to the Internet allows you to install the cable modem more quickly and easily than connecting to the Internet using the Ethernet port, because you do not need to install a network interface card (NIC). USB, however, only allows you to use one Internet protocol (IP) address per cable modem.

Using the Ethernet port allows you to use a hub to connect multiple computers to the cable modem, and you can use multiple IP addresses from your cable service provider.

CAUTION: *You cannot use the USB and Ethernet connections simultaneously. Therefore, you should not have the USB cable and the Ethernet cable plugged into the cable modem at the same time. Having the USB and Ethernet cables plugged into the cable modem at the same time might prevent you from accessing the Internet.*

See Chapter 2 "USB Installation" to set up the USB connection.

Setting Up the Computer to Use an Ethernet Connection

You can use the Ethernet port to connect to the Internet with the following operating systems: Windows 95, Windows 98, Windows 2000, or Macintosh 7.5 (or later).

Configuring the TCP/IP Protocol

If you are using a Macintosh computer, turn to the instructions on page 25.

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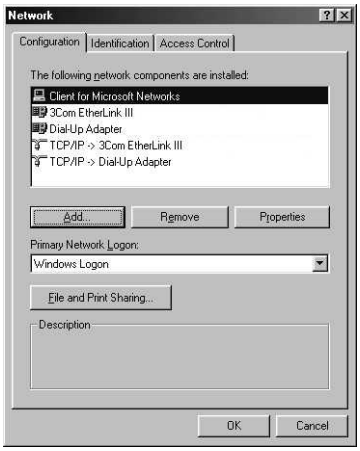
Configuring the TCP/IP Protocol on a Windows PC

You need to have an Ethernet network interface card (NIC) and the TCP/IP communications protocol installed on your system before you install the cable modem. Follow these instructions to verify that TCP/IP is installed and configured correctly.

For the Windows 95/98 Operating System

1. Right-click the Network Neighborhood icon on the Windows desktop and click *Properties*.
2. A list of installed network components appears. Look for an entry named *TCP/IP*. This entry may be followed by an arrow and a description of the NIC hardware device installed in the computer.

Windows 95/98 TCP/IP Binding



If a similar entry is present, you can now connect the cable modem. Go to "Connecting the Cable Modem" for the instructions. However, if a similar entry is *not* present, complete the following steps.

1. Click *Add*...
2. Click *Protocol*, and then click *Add*...
3. Click *Microsoft* in the *Manufacturers:* list and then select *TCP/IP* in the *Network Protocols:* list.
4. Click *OK*.

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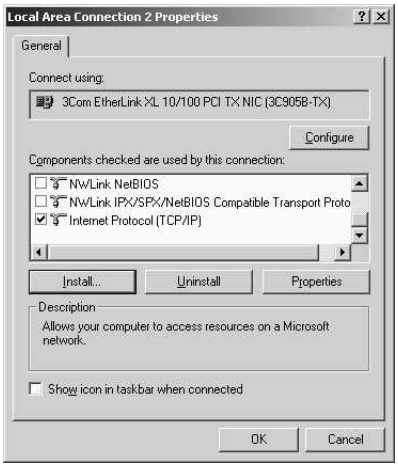
For the Windows 2000 Operating System

1. Right-click the My Network Places icon on the Windows desktop.
2. Right-click on *Local Area Connection* and click *Properties*.
3. A list of installed network components appears. Look for an entry named *TCP/IP*.

Windows 2000 TCP/IP binding



If a similar entry is present, you can now connect the cable modem. Go to "Connecting the Cable Modem" for the instructions. However, if a similar entry is *not* present, complete the following steps.

1. Scroll to the Internet Protocol (TCP/IP) option. Click to place a check mark in the Internet Protocol check box.
2. Click *OK*.

Configuring the TCP/IP Protocol on a Macintosh

You need to make sure the TCP/IP communications protocol and an Ethernet device is installed on the computer before you install the cable modem. Many Macintosh computers have Ethernet devices installed at the factory.

1. Click the Apple icon in the upper left corner of the Finder. Scroll down to *Control Panels*, and click *TCP/IP*.

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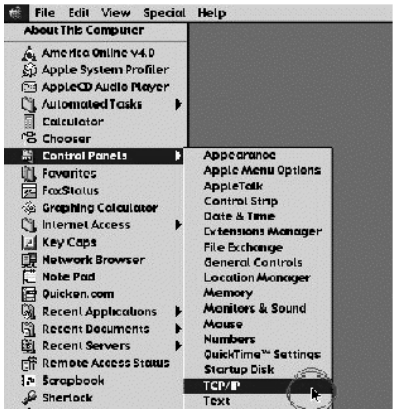
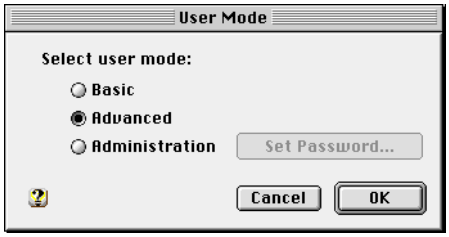


2 Click *Edit* on the Finder (gray bar) at the top of the screen. Scroll down to the bottom of the menu and click *User Mode*.

3 Click *Advanced* then click *OK*.



4 Click the Up/Down selector arrows (to the right of *Configure*) and select *Using DHCP Server.*

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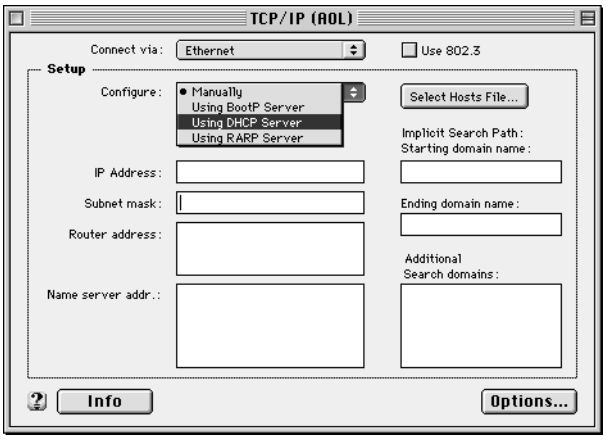
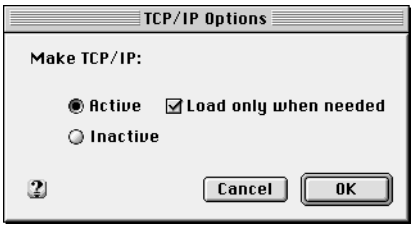


5 Click *Options*. Then click *Active*.

In some cases, the Load only when needed *check box does not appear. If it is visible, click the box. A check mark appears in the box.*

6 Click *OK*.



7 Verify that the Use 802.3 box is unchecked (circled in the following image). If there is a check mark in the box, click it to remove the check mark. Then click *Info* in the lower left corner.

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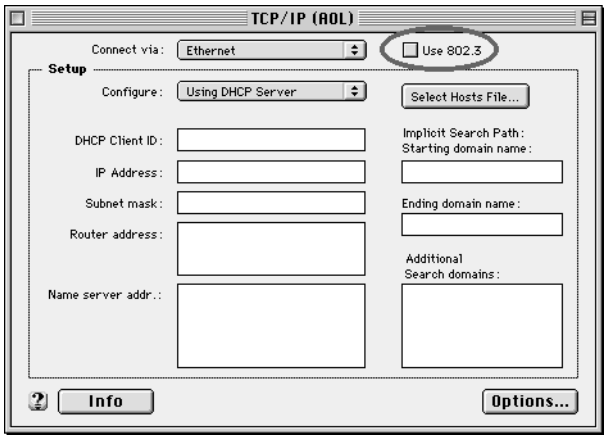
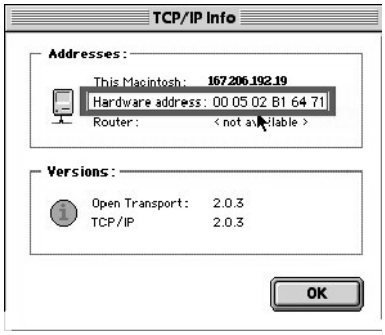


8 Verify that there is a hardware address listed in the TCP/IP Info screen.



If there is, click *OK* and close the TCP/IP Control Panel (click *File* and scroll down to click *Close*).

If there is no hardware address listed in the TCP/IP Info screen, you must reset the computer's Parameter RAM. To do this, power off the Macintosh. With the power off, simultaneously press and hold down the Command (Apple), Option, P, and R keys on the keyboard. Keeping those keys pressed, power on the Macintosh.

When the computer starts, you will hear the Apple chime. Keep the keys pressed for at least three chimes, then release the keys and allow the computer to start up. When fully rebooted, ensure that all TCP/IP settings match those

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in the preceding instructions. If the computer still does not have a Hardware Address, please contact your local Apple authorized dealer or Apple support.

Connecting the Cable Modem

1. Power off the computer.
2. Use the illustration on page 35 as a guide to make the following connections:
   - Connect the cable line to the cable modem's CATV cable connector. Be careful not to bend the wire in the center of the cable line when you connect it to the cable modem. After hand-tightening the CATV cable connector, use your adjustable wrench to firmly tighten it. Be careful not to over-tighten the connector or you may damage either the connector or the cable modem. If you plan to have the cable line connected to a television as well as to the cable modem, you will need a cable line splitter (not included).
   - Plug the cable modem's power adapter into a wall outlet or surge protector and into the cable modem's power jack.
   - Plug one end of the RJ-45 network cable into the cable modem's Ethernet port and the other end into the existing NIC.
3. Verify that the cable modem starts up and initializes properly. When the cable modem is operating properly, the cable modem Link Status and Power LEDs are lighted a solid green.

If you are powering up the cable modem for the first time, allow 15 minutes for this process to complete. See "Cable

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Modem Operation" for a more in-depth description of the front panel LED indicators.

4 Power on the computer. When installation is complete, your setup should resemble the diagram on page 35.

Using the Cable *Connections* CD

You do not need to install the included Cable *Connections* CD to use the Ethernet port on the cable modem. You will, however, want to discover the valuable free software products included on the CD.

To install the Cable *Connections* CD, follow the instructions on the CD.

Troubleshooting the Ethernet Installation

I cannot access my e-mail or Internet service.

- Check all connections. Make sure the cable line is securely connected to the cable jack on the back of the modem. Verify that the RJ-45 cable is securely plugged into both the modem and the network interface card. Make sure the power adapter is properly plugged into the modem and into a wall outlet or surge protector. If the cable modem is properly connected, the Cable Modem Power, Cable Modem Status, and Link Status indicator lights on the front of the modem should all be a solid color.
- Power cycle the cable modem by unplugging the power jack from its electrical outlet and then plugging it back into the outlet. Then try reconnecting to your cable service provider.
- Call your cable service provider to verify that their service is two-way. This modem is designed for use with two-way cable plants.
- The network interface card or USB network interface may be malfunctioning. Refer to its documentation for troubleshooting information.
- If you are using a cable line splitter so that you can connect the cable modem and a television at the same time, try removing the splitter and reconnecting the

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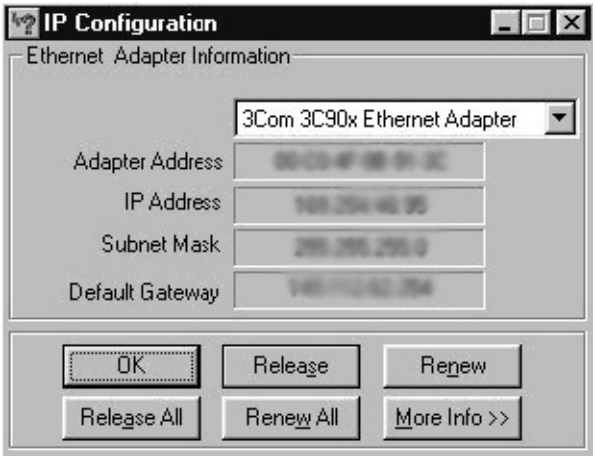
cables so that the cable modem is connected directly to the cable wall jack. Then try reconnecting to your cable service provider.

- Check for a resource conflict. To do this, right-click the My Computer icon on the Windows desktop. Then click *Properties*. Click the Device Manager tab and look for a yellow exclamation point or red X over the NIC in the Network adapters field. If you see either, you have an IRQ conflict. Refer to the manufacturer's documentation that came with your network interface card.
- Make sure that TCP/IP is the default protocol in use by your computer.
- Release and renew the computer's IP address.

  To release and renew the IP address for the Windows 95/98 operating system:

a Click Windows *Start* and click *Run*.

b Type **`winipcfg`** in the Open field and click *OK*. The IP Configuration screen appears.



c In the Ethernet Adapter Information group area, click the drop down arrow and select the Ethernet adapter.

d Click *Release*. The IP address changes to *0.0.0.0*.

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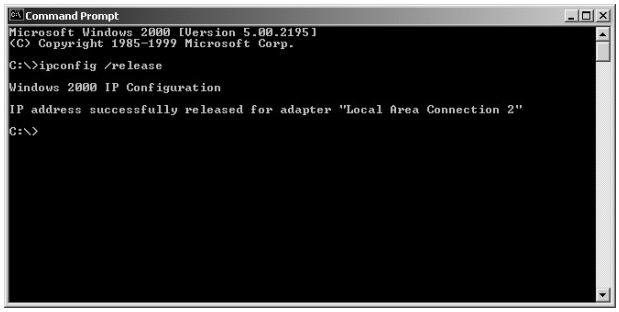
e Click *Renew* to refresh the IP address. The refreshed address may or may not be the same as the original IP address.

To release and renew the IP address for the Windows 2000 operating system:

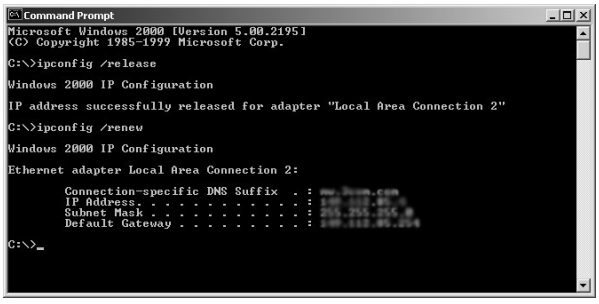
a Click Windows *Start* and select *Programs,* then *Accessories*.

b Click *Command Prompt*.

c At the command prompt (C:\), type **`ipconfig /release`** and press the *Enter* key (notice that there is a space between *ipconfig* and */release*).


Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.
C:\>ipconfig /release
Windows 2000 IP Configuration
IP address successfully released for adapter "Local Area Connection 2"
C:\>

d After the system releases the IP address, at the command prompt type **`ipconfig /renew`** and press the *Enter* key (notice that there is a space between *ipconfig* and */renew*).


Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.
C:\>ipconfig /release
Windows 2000 IP Configuration
IP address successfully released for adapter "Local Area Connection 2"
C:\>ipconfig /renew
Windows 2000 IP Configuration
Ethernet adapter Local Area Connection 2:
Connection-specific DNS Suffix . :
IP Address. . . . . :
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
C:\>

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e Exit the Command Prompt screen to return to the Windows desktop.

The Cable Status LED never stops blinking.

The signal from your cable service provider's equipment may be too weak or the cable line may not be properly attached to the modem. If the cable line is properly connected to the modem, call your cable service provider to verify whether or not a weak signal is the problem.

All four of the LEDs on the front of my cable modem are lighted and blinking.

Call your cable service provider or 3Com's technical support for assistance.

All of the LEDs on the front of my modem look right, but I still cannot access the Internet.

- If the Power, Link Status LEDs, and Data Rate LEDs are lighted, the cable modem is operating properly. Try shutting down the computer and then turning it back on. This causes the computer to re-establish communications with your cable service provider's computer.
- Power cycle the cable modem by removing the power adapter from its outlet and then plugging it back into the outlet. Then try reconnecting to your cable service provider.
- You may not have installed TCP/IP properly, or the TCP/IP parameters provided by your cable service provider may not be correct for your computer.
- If you are using a cable line splitter so that you can connect the cable modem and a television at the same time, try removing the splitter and reconnecting the cables so that the cable modem is connected directly to the cable wall jack. Then try reconnecting to your cable service provider.

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The power on my modem goes on and off sporadically. The Link Status light never stops blinking.

You may be using the wrong power adapter. Check that the power adapter you are using is the one that came with the cable modem.

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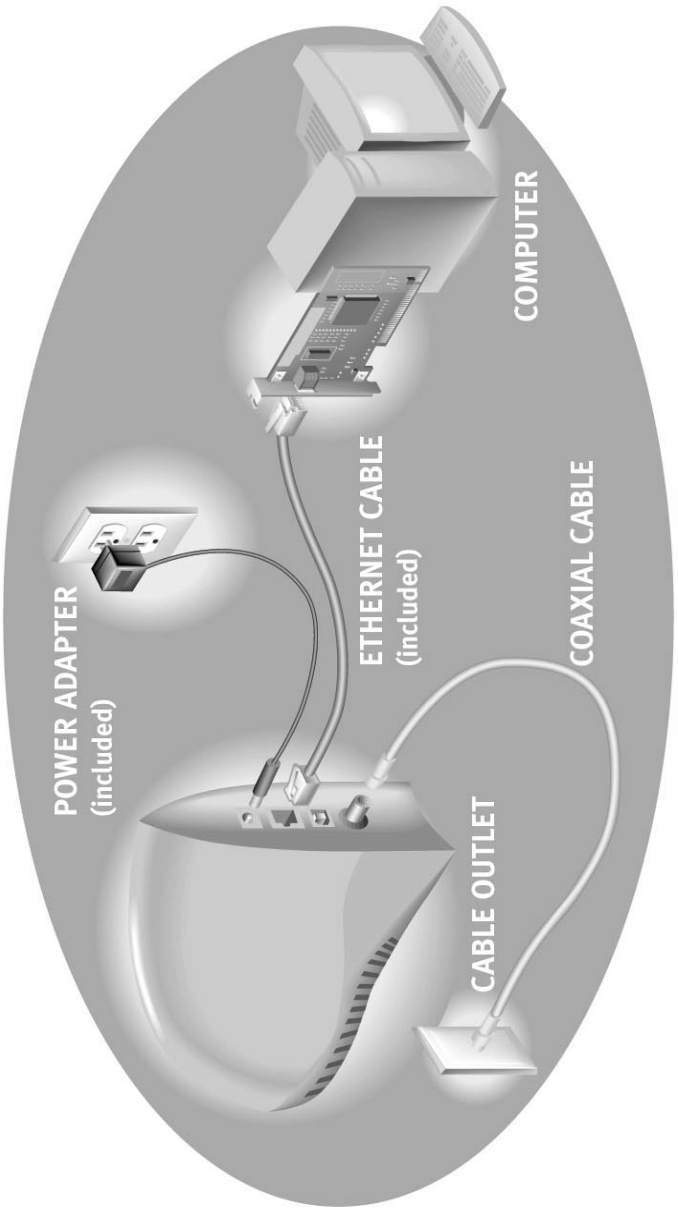

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4 CABLE MODEM OPERATION

When the cable modem is properly installed and the power adapter is connected to AC power, the modem automatically scans for the active cable modem channel from your cable service provider's server. When the front panel LEDs indicate the modem is connected to the server, all you have to do is launch your Internet browser or e-mail software, and you are ready to work online.

Interpreting The Cable Modem's LEDs

Here is a quick overview of the LEDs on the front of the modem and what they can tell you about the performance of the modem and the condition of the connection.

LEDs on the Front of the Modem

- **Power** - Indicates power is applied to the cable modem. This light is solid green when the modem is on. You will also hear an audio notification once power is applied.

- **Link Status -** This LED indicates the modem's connection status. It blinks steadily until the modem has established a connection. Once a connection is established, the LED is lighted solid green. You will also hear an audio notification once a connection is established.

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- **Data Rate** - Indicates data is being transmitted over the cable network. This LED should blink when data is being transmitted over the RF interface and at a rate dependent on data throughput.

- **Multifunction** - Your cable service provider determines the function of this LED. Depending on how your cable service provider uses this LED, there may or may not be an audio notification associated with this LED.

The LED on the back of the cable modem (located near the power jack) is a status LED. The following chart explains how to interpret its activity:

LED on the Back of the Modem

LED STATE	REPEATING	DESCRIPTION
SHORT OFF, LONG ORANGE	YES	Startup, power on self test
ORANGE	NO	Failed power on self test
SHORT OFF, SHORT ORANGE	YES	Downstream hunt
LONG ORANGE, SHORT GREEN	YES	Acquisition in process
SHORT OFF, SHORT GREEN	YES	Offline/not authorized for service
GREEN	NO	Fully operational state

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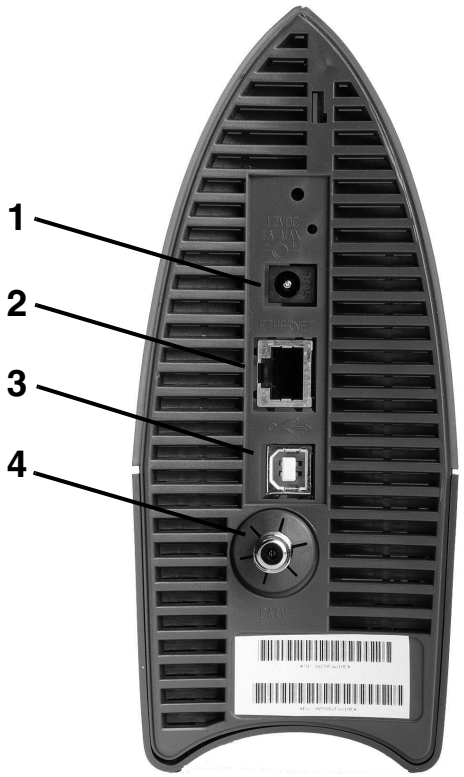
Connectors and Switches on the Back of the Cable Modem

1. **Power Jack:** This is where you plug in the power adapter that came with the cable modem. Remember to use *only* the power adapter that came with the cable modem. Other power adapters might have voltages that are not correct for your particular cable modem. Using a power adapter with the wrong voltage can damage the cable modem.
2. **Ethernet Port:** This is where you plug the included RJ-45 Ethernet cable. The other end connects to the RJ-45 jack on the NIC.
3. **USB Port:** This is where you plug the included USB cable. The other end connects to the USB port on the computer.
4. **Cable RF Connector:** This is where you connect the coaxial cable that leads to the splitter or the cable wall jack.



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5 VIEWING THE CABLE MODEM'S CONFIGURATION

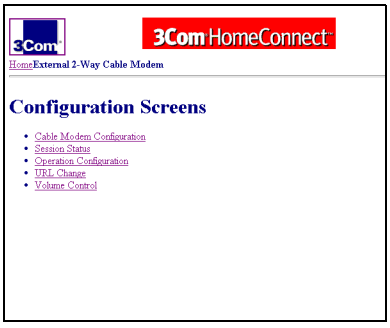
You can use the 3Com Web-based configuration software to configure the cable modem.

NOTE: If you do not currently have a Web browser installed on the computer, you can find the two most popular browsers, Netscape Navigator and Microsoft's Internet Explorer, on the Cable Connections *CD included with the modem.*

Open your Web browser and point it to the following URL:

http://149.112.50.65

The Configuration Screens menu appears.



Here is an overview of the options on the Configuration Screens menu:

- **Cable Modem Configuration:** Click this option to launch the Cable Modem Configuration screen, which displays the cable modem's MAC address, serial number, software version, hardware version, and type of cable modem.

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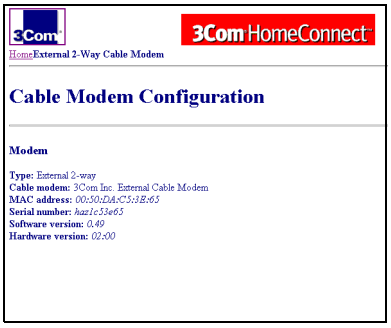
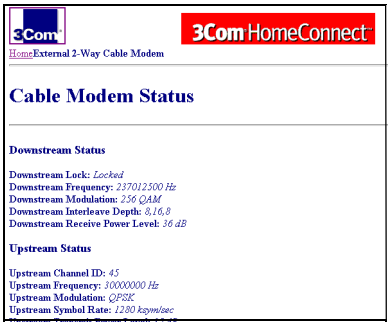


- **Session Status:** Click this option to launch the Cable Modem Status screen. This screen displays both the cable modem status and operational parameters. The status describes the downstream and upstream characteristics. The valid range of the Transmit Power Level is 8 dbmV to 58 dbmV. The value range of the Upstream Channel ID is from 1 to 255.



- **Operation Configuration:** Click this option to launch the Cable Modem Operation Configuration screen. The operational parameters displayed on this screen describe important aspects of the cable modem's configuration file.

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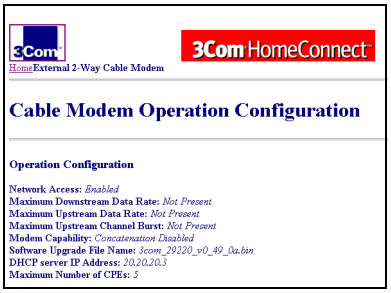
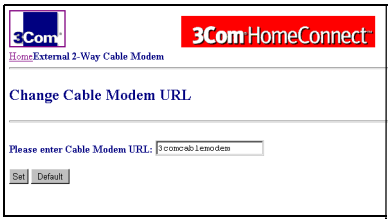

3Com HomeConnect
HomeExternal 2-Way Cable Modem
Cable Modem Operation Configuration
Operation Configuration
Network Access: Enabled
Maximum Downstream Data Rate: Not Present
Maximum Upstream Data Rate: Not Present
Maximum Upstream Channel Burst: Not Present
Modem Capability: Concatenation Disabled
Software Upgrade File Name: 3com_29220_v0_49_0a.bin
DHCP server IP Address: 20.20.20.3
Maximum Number of CPEs: 5

- **URL Change:** Click this option to launch the Change Cable Modem URL screen. On this screen, you can change the URL that you use to access all of these configuration screens. After you change the URL setting, type it into your browser's URL window to access these configuration screens.



- **Volume Control:** Click this option to launch the Cable Modem Sound Control screen. This screen allows you to adjust the volume of the sounds emitted by the cable modem.

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6 SUPPORT RESOURCES

Support Resources

If you need help operating the cable modem, see "Troubleshooting the USB Installation" and "Troubleshooting the Ethernet Installation." If you need further help, refer to the following resources.

World Wide Web

Visit our online support home page:

http://consumer.3com.com/cable/

You can send a message to technical support by clicking *Contact Us* in the "Site Tools" section of this Web site.

90-Day Free Installation Support

3Com offers free installation support for this product for 90 days after purchase. Please call the following toll-free number:

888 877 5040

After the 90-day limit, refer to our regular technical support hotline.

Technical Support Hotline

Technical questions about 3Com cable modems can also be answered by technical support representatives. Regular telephone charges apply. Service is available 7:00 a.m. - 11:00 p.m. CST Monday through Sunday.

847 262 2550

If You Are Still Having Problems

- Review this manual.
- Call or visit your modem dealer. They may be able to assist you.

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- If your dealer cannot help you, contact 3Com Technical Support. When you call, specify the modem's serial number (found on the modem and on the outside of the box) and the software being used.

If You Need to Return the Modem to Us

Contact 3Com Customer Support. If the support representative determines that you need to return the modem, you will receive a USO (User Service Order) number. You must have a USO number before returning the modem to us. Ship the unit, postage paid, in a strong box made of corrugated cardboard with plenty of packing material. DO NOT send the modem back in the original box. Send ONLY the modem (NOT manuals, diskettes, etc.). Include your USO number, name, and address on the shipping label as well as inside the package. If possible, send the package via a courier capable of tracking the progress of the shipment. Ship to the following address:

3Com
USO #_____
Dock 15
1800 W. Central Ave.
Mount Prospect, IL 60056

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7 REGULATORY INFORMATION AND LIMITED WARRANTY

Manufacturers Declaration of Conformity

FCC Declaration of Conformity

We declare under our sole responsibility that the

Description: 3Com HomeConnect Cable Modem External with USB

To which this declaration relates, is in conformity with the following standards or other normative documents:

- ANSI C63.4-1992 Methods of Measurement
- Federal Communications Commission 47 CFR Part 15, subpart B

  15.107 (e) Class B Conducted Limits

  15.109 (g) Class B Radiated Emissions Limits

3Com Corporation
3800 Golf Road
Rolling Meadows, IL 60008
U.S.A.

Telephone: (847)-262-5000

FCC Class B Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful electromagnetic interference, and

(2) this device must accept any interference received including interference that may cause undesired operations.

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FCC Notice: Radio and Television Interference

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user may find the following information prepared by the Federal Communications Commission helpful: The CIB Interference Handbook and The CIB Telephone Interference Bulletin.

These documents are available on the Internet through the FCC Compliance and Interference Bureau Home Page at http://www.fcc.gov/cib listed under documents. Select CIB Interference Handbook or CIB Telephone Interference Bulletin.

CAUTION: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THIS EQUIPMENT

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UL/c UL Listing:

This Information Technology Equipment is UL and C-UL listed for both the US and Canadian markets respectively.

Canadian Notice:

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled Digital Apparatus, ICES-003 of Industry Canada.

Cet appareil numérique respecte les limites de bruits radio-électriques applicables aux appareils numériques de la Classe B préscrites dans la norme sur le matériel brouilleur: Appareils Numériques, NMB-003 édictée par l'Industrie Canada.

Centre de guarantie et de service aprés vente:

Keating Technologies
Royal Crest Court, Suite 120
Markham, ONT L3R 9X4

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make electrical ground connections by themselves, but should contact the appropriate inspection authority or an electrician, as appropriate.

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INTERNATIONAL DECLARATION OF CONFORMITY

Electromagnetic Compatibility

This equipment was tested and found to conform to the Council Directive 89/336/EEC for electromagnetic compatibility. Conformity with this Directive is based upon compliance with the following harmonized standards:

CISPR 22:1997 Limits and Methods of Measurements of Radio Interference. This equipment conforms to the Class B limits.

AS/NZS3548 Australian/New Zealand Limits and Methods of Measurement of Information Technology equipment. This equipment conforms to the Class B limits.

EN 50082-1: 1995 Electromagnetic Compatibility Generic Immunity Standard.

VCCI, Class 2

CNS 13438: 1997, Class B

Safety (Low Voltage Directive)

This equipment was tested and found to conform to the Council Directive 72/23/EEC for safety of electrical equipment. Conformity with this Directive is based upon compliance with the following harmonized standard:

IEC 60950 (1991) Second Edition with Amdts. No. 1(1992), 2(1993), 3(1995) and 4(1996) Safety of Information Technology Equipment Including Electrical Business Equipment; EN60950 (1992) with Amdts. 1,2,3,4 and 11, and with National Differences as specified in the Test Report.

TS001 and AS/NZS3260 Australian/ New Zealand standard for Safety of Information technology equipment Including Electrical Business Equipment.

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Special Notes:

Japan

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

Translation:
This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

Performance Specifications

This equipment has a bit-error rate (BER) less than 10^{-8} when the signal-to-noise ratio (SNR) is 23.5 dB or greater when operating in 64 QAM mode, and when the SNR is 30.0 dB or greater when operating in 256 QAM mode.

Export Notices

- Unlawful to export from the US or Canada without an approved US Department of Commerce export license.
- The hardware contained in this product contains encryption software which may not be exported or transferred from the US or Canada without an approved US Department of Commerce export license.

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3Com Corporation Limited Warranty

Hardware

3Com warrants to the end user ("Customer") that this hardware product will be free from defects in workmanship and materials, under normal use and service, for the following length of time from the date of purchase from 3Com or its authorized reseller: five (5) years.

3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, 3Com may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of 3Com. Replacement products may be new or reconditioned. 3Com warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

Software

3Com warrants to Customer that each software program licensed from it will perform in substantial conformance to its program specifications, for a period of ninety (90) days from the date of purchase from 3Com or its authorized reseller. 3Com warrants the media containing software against failure during the warranty period. No updates are provided. 3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to refund the purchase price paid by Customer for any defective software product, or to replace any defective media with software which substantially conforms to applicable 3Com

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published specifications. Customer assumes responsibility for the selection of the appropriate applications program and associated reference materials. 3Com makes no warranty or representation that its software products will meet Customer's requirements or work in combination with any hardware or applications software products provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected. For any third party products listed in the 3Com software product documentation or specifications as being compatible, 3Com will make reasonable efforts to provide compatibility, except where the non-compatibility is caused by a "bug" or defect in the third party's product or from use of the software product not in accordance with 3Com's published specifications or user manual.

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In addition to the Hardware Warranty and Software Warranty stated above, 3Com warrants that each product sold or licensed to Customer on and after January 1, 1998 that is date sensitive will continue performing properly with regard to such date data on and after January 1, 2000, provided that all other products used by Customer in connection or combination with the 3Com product, including hardware, software, and firmware, accurately exchange date data with the 3Com product, with the exception of those products identified at 3Com's Web site,

http://www.3com.com/products/yr2000.html

as not meeting this standard. If it appears that any product that is stated to meet this standard does not perform properly with regard to such date data on and after January 1, 2000, and Customer notifies 3Com before the later of

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April 1, 2000, or ninety (90) days after purchase of the product from 3Com or its authorized reseller, 3Com shall, at its option and expense, provide a software update which would effect the proper performance of such product, repair such product, deliver to Customer an equivalent product to replace such product, or if none of the foregoing is feasible, refund to Customer the purchase price paid for such product.

Any software update or replaced or repaired product will carry a Year 2000 Warranty for ninety (90) days after purchase or until April 1, 2000, whichever is later.

Obtaining Warranty Service

Customer must contact a 3Com Corporate Service Center or an Authorized 3Com Service Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from 3Com or its authorized reseller may be required. Products returned to 3Com's Corporate Service Center must be pre-authorized by 3Com with a User Service Order (USO) number marked on the outside of the package, and sent prepaid and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. The repaired or replaced item will be shipped to Customer, at 3Com's expense, not later than thirty (30) days after 3Com receives the defective product.

In the United States:

3Com
USO #_____
Dock 15
1800 W. Central Ave.
Mount Prospect, IL 60056

In Canada:

Keating Technologies
USO #_____
25 Royal Crest Court, Suite 120
Markham, Ontario L3R 9X4

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